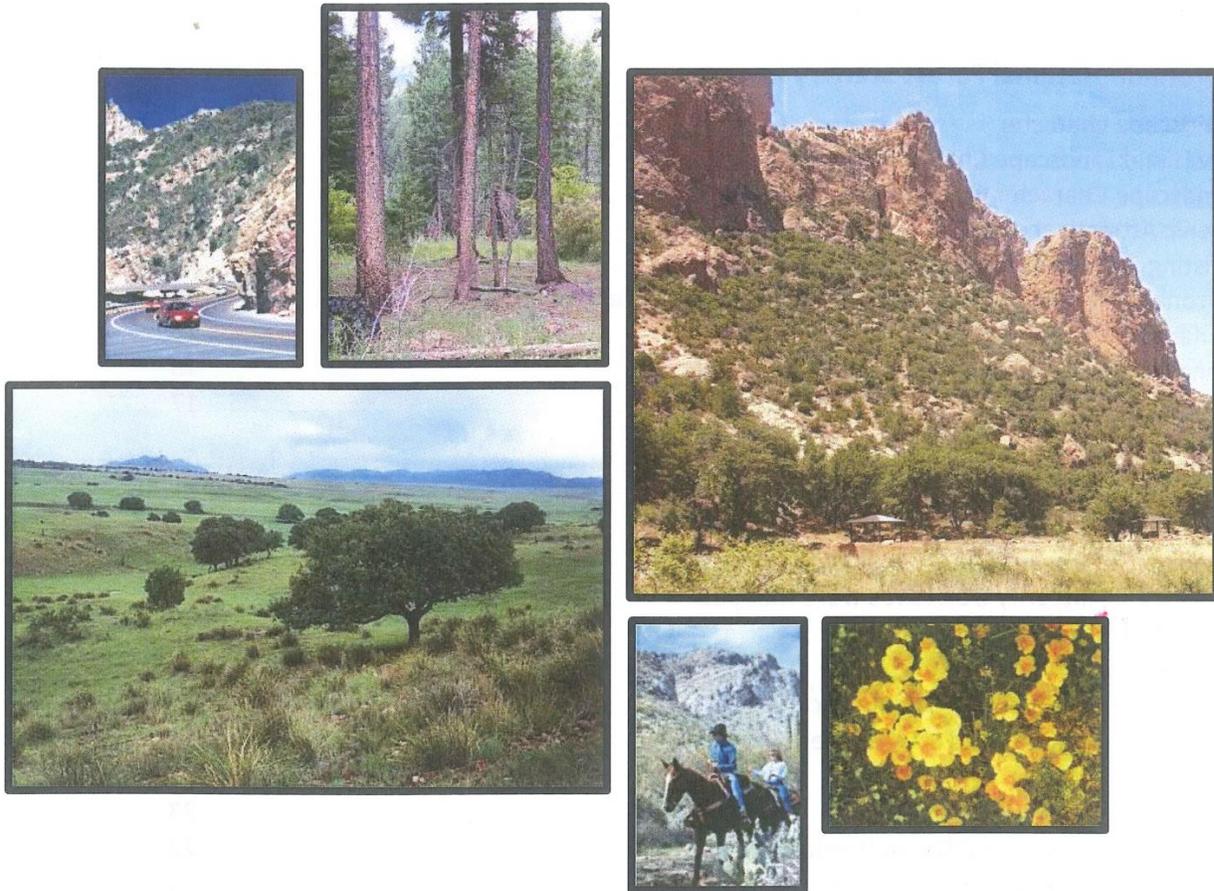


Coronado National Forest Scenery Management System Implementation Guide

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Cover Photos (clockwise from upper left): Sky Island Scenic Byway, Mixed conifer forest in the Pinaleño Mountains, Sunny Flat Campground in Cave Creek Canyon, Mexican gold poppies in the Santa Rita Mountains, equestrians in Pusch Ridge Wilderness, and San Rafael grasslands.

Introduction

*Why are we managing scenery?
So that our children and grandchildren can enjoy the beauty and
spirit of the national forests, just as we have enjoyed them.*

USFS Landscape Aesthetics; A Handbook for Scenery Management



Sky Island Scenic Byway, Santa Catalina Mountains

Overview

The sixteen sky island mountain ranges in the Coronado National Forest (NF) are a significant provider of public lands and high quality natural scenery in southeastern Arizona. These mountains offer a wide variety of landscapes including deeply carved desert canyons, golden rolling grasslands, oak woodlands, and mountaintop conifer forests. The Coronado NF's mountains also provide a visual backdrop to cities and highways in the surrounding deserts.

Sightseeing is a popular activity on the Coronado NF. Elevations range from 3,000 ft. to 10,720 ft., and visitors traveling into a sky island experience vegetation communities as diverse as a trip from Mexico to Canada. According to the 2012 National Visitor Use Monitoring, nearly 60% of visitors to the Coronado NF participate in "viewing natural features (scenery)" and over 23% of visitors to the Coronado NF used a Scenic Byway (US Forest Service 2012).

Research has shown that high-quality scenery enhances people's lives and benefits society. Viewing natural scenery is psychologically and physiologically beneficial. People have positive responses (lower blood pressure, lower heart rate, and reduced muscle tension) when viewing nature (US Forest Service 1995).

The US Forest Service's Scenery Management System (SMS) provides a framework for the inventory, analysis, and management of scenery on National Forest Lands. The SMS can be used for all scales of forest management, from broad scale forest planning to detailed project-level work.

Most forest uses and management activities have an effect on scenery. On the Coronado NF, these uses and activities include recreation sites (campgrounds, picnic areas, visitor centers, vista points, trailheads, etc.), special uses (communication sites, utility lines, astrophysical complexes, summer homes, organization camps, range fences and tanks, a lodge, a ski area, a marina, a search and rescue headquarters, sheriff residences, State and County department of transportation storage yards, ranch headquarters, weather stations, cemeteries, apiaries, border patrol fences/towers/roads, etc.), Forest Service facilities (roads, offices, administrative sites, historic sites, fire lookout towers, rental cabins,

helipads, etc.), and other various activities (cultural sites, public recreation, fire and vegetation management, mines/quarries, livestock grazing, dams, etc.).

How to Use This Guide

Guidance for managing scenery on Coronado NF lands comes primarily from four sources:

- Forest Service Manual (FSM) 2800 Landscape Management
- Forest Service Handbook (FSH) Landscape Aesthetics; A Handbook for Scenery Management (Agriculture Handbook #702)
- Land and Resource Management Plan for the Coronado National Forest (Forest Plan)
- Coronado National Forest Scenery Management Implementation Guide

This implementation guide provides information for the management of scenic resources on the Coronado NF and details for applying forest plan guidance. This guide strives to balance the protection of scenic quality while allowing for multiple uses and the management of other resources.

This guide is divided into sections. The Introduction provides a brief overview and general information. The Coronado National Forest Scenery Inventory, Scenery Objectives and Guidance, and Maps in the Appendix are the main portion of this document, providing guidance for managing scenery across the forest. The Appendix provides additional support materials.

Background

Scenic resources have long been an important part of managing National Forest lands. Direction for protecting visual quality can be found in numerous legal documents, from the 1958 United States Code and 1969 National Environmental Policy Act, to the current Forest Service Manual and Handbooks.

The US Forest Service's Visual Management System was first published in 1974. In the early 1980s, the Coronado NF implemented the system and established Visual Quality Objectives (VQOs). The VQO maps became a part of the 1986 Coronado National Forest Plan and were used for project planning and NEPA analysis.

Although the VQO maps provided good guidance for many years, they became outdated for a number of reasons. There has been major population growth in southeastern Arizona, especially the Tucson metropolitan area. According to Pima Association of Governments, Pima County's population increased from 531,443 people in 1980 to more than a million people in 2009 (Pima Association of Governments 2009); roughly a doubling of the population in 30 years. This has led to dramatic increases in visitor use along roads and trails throughout the Coronado NF for both traditional National Forest uses (scenic driving, hiking, camping) and more recent activities that have dramatically grown in popularity (including OHV touring, birding, and mountain biking), and an increase in public awareness about protecting scenic resources on National Forest lands. Three highways near and within the Coronado NF have been designated as Scenic Byways, which increase both use and concern for visual quality. In areas not easily visible from major travelways, the VQO maps established an objective of "Maximum Modification" (which allows human activities to dominate the landscape character), but some of these areas are visible from other viewing locations. The VQO mapping did not consider viewsheds from trails, and additional trails have been constructed (including the Arizona National Scenic Trail). Catalina State Park was added to the Coronado NF and currently has no scenery objectives. A more regional strategy for determining Variety Class (called Scenic Attractiveness in the Scenery Management System) was needed. And finally, the VQO maps have been problematic in the implementation of prescribed fire and ecosystem

restoration projects, since many VQOs don't allow for human activities to be visible, even if the activities will benefit scenic resources in the long-term.

Over the years since 1974, the Forest Service developed a new system for managing scenery, guided by substantial advances in research and technology and a significant increase in constituent demand for high-quality scenery. The SMS incorporates new knowledge, uses new terminology, results in different end products, and can be mapped using GIS technology. In a letter dated August 1994, the Deputy Chief of the Forest Service provided direction by stating: "This letter will serve to inform all field units that current and future planning endeavors shall now begin to reflect the updated and much improved Scenery Management System." In 1995, *Landscape Aesthetics: A Handbook for Scenery Management* was published, and the document included a note from the Chief of the Forest Service directing forests to "begin using the concepts and terms contained in this Handbook as you work on new projects or initiate forest plan revisions". These were followed by letters from the Forest Landscape Architect (1995), a white paper from the Washington Office (1997), and another letter from the Deputy Chief of the Forest Service (2001), all stating the same direction.

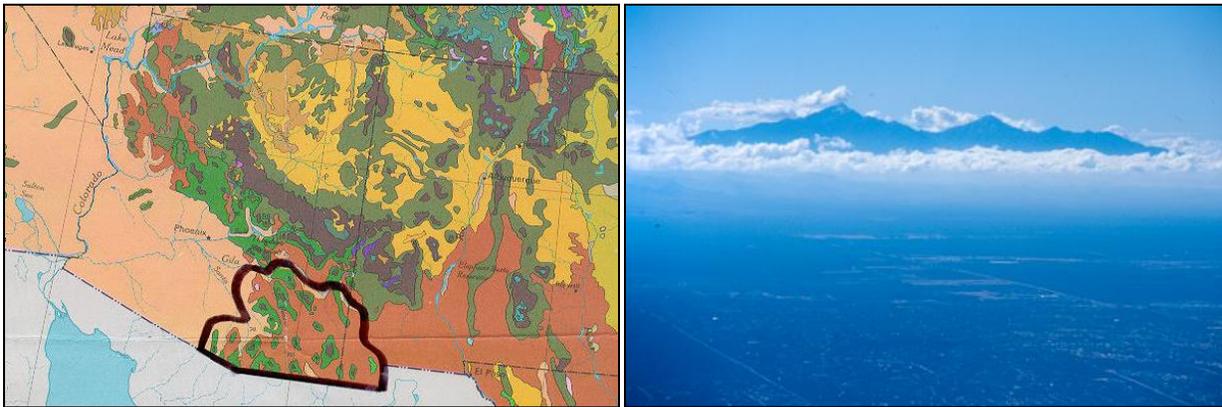
Development of SMS Inventory for Coronado National Forest

In 2001, the first SMS inventory of the Coronado NF was completed. The process included landscape architects working with a team of district rangers, recreation and trails employees, knowledgeable field staff, and other resource specialists. The team identified concern levels for roads and trails across the Coronado NF and throughout southeastern Arizona and southwestern New Mexico. Then, landscape architects spent time in the field to verify results, and ensure forest-wide consistency. A Geographic Information System (GIS) specialist helped map concern levels, overlaid vegetation, slopes, and waterforms to create scenic attractiveness maps, and used the results to yield scenic class maps. For a more complete description of this process, see "Coronado National Forest Scenery Management: Scenery Management System Inventory and Application, 2001".

Over the following decade, gaps in the 2001 inventory were filled in (including an inventory of existing scenic integrity) and a mid-scale vegetation analysis of the Coronado NF was completed. In 2010 and 2011, concern levels were reviewed and minor updates were made, mid-scale vegetation and riparian area data were incorporated into scenic attractiveness mapping, computer visibility mapping was completed, and proposed Scenic Integrity Objectives (SIOs) were mapped. In the fall of 2012, SIOs were reviewed and evaluated for compatibility with other forest uses (Hill, 2013), which yielded some unresolved questions about how to map SIO High and Very High, appropriate SIOs for the International border areas, how to ensure that SIOs would not conflict with range management activities and OHV use, what SIOs are most appropriate for special areas and residences, and how widely scattered minor facilities may effect SIOs. In late 2012, it became clear that an implementation guide would help clarify resource-specific guidance.

The Forest Plan (including the desired conditions, guidelines, standards, and management approaches), along with this implementation guide and the maps contained within it, provide the primary guidance for managing scenic resources on the Coronado NF.

Coronado National Forest Scenery Inventory



Vegetation types in the Sky Island Landscape (left). Tucson Valley and the Santa Rita Mountains (right).

Landscape character

Landscape Character is the combination of the valued biological, physical, and cultural attributes that makes a place unique, and is sometimes referred to as “sense of place”. A landscape character description of the broad-scale landscape serves as the starting point for Scenery Management and provides a basis for determining inherent Scenic Attractiveness.

The southeastern Arizona landscape that includes the Coronado NF is a land of contrasts; distinct mountain “islands” rise above a vast ocean of desert plains. This landscape differs in topography, vegetation patterns, and other characteristics from the adjacent landscapes. To the north, the Mogollon rim elevates lands onto a forested plateau. To the south, mountainous areas dominate and are rarely broken by the wide, flat valleys. To the east and west the deserts sprawl for hundreds of miles, rarely broken by large mountain ranges.

The sky island landscape area shown on the map above is similar to the 2003 US Environmental Protection Agency’s (EPA) Level III Ecoregions of the Continental United States “Madrean Archipelego”, the EPA’s Ecoregions of the Southwest “Western Sierra Madre Piedmont” (aka “Sky Islands”), and The Nature Conservancy 1999 Ecoregion “Apache Highlands”, though the latter area also includes the Mogollon rim area.

A general landscape character description for the Coronado NF follows. The Forest Plan contains additional descriptive information, especially the general descriptions and desired conditions found in Chapter 2 Vegetation Communities, Recreation, and Scenery. Site-specific landscape character descriptions can be found in the Forest Plan Chapter 3 (general descriptions and desired conditions for management areas including Land Use Zones, Wildernesses, recommended wilderness and Wilderness Study Areas, eligible Wild and Scenic Rivers, and the Arizona National Scenic Trail) and Chapter 4 (general descriptions and desired conditions for geographic areas, also known as Ecosystem Management Areas).

The Sky Island Landscape Character Type

The Sky Island Landscape Character Type is a region of striking contrasts. Massive, pine-clad mountain ranges rise abruptly above an ocean of broad desert plains, forming an arid archipelago: sky islands. The area lies at the intersection of four major biotic and geographic phenomena: the Rocky Mountains, the

Sierra Madre Occidental Mountains, the Sonoran desert, and the Chihuahuan desert. Characteristics of all of these can be found here.

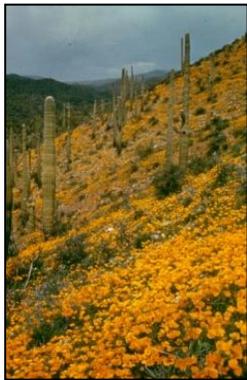
The geology of this area is called basin and range. Faulting pushed some lands upward to create mountains and other lands subsided to create valleys. Erosion then carved mountain canyons and desert arroyos into the landscape.



The Pinaleno Mountains (also known as Mount Graham)

The sky islands provide a wide variety of scenery and settings. Enormous diversity is encountered by climbing from the desert into mountains reaching 9-10,000 feet elevation. The lower elevations have their own scenic appeal, with stands of tall saguaro cacti (primarily on the Santa Catalina RD) and golden rolling grasslands (such as those in the San Rafael Valley and Sonoita area). Mountaintops, and their cool, shady conifer forests and grassy meadows provide a dramatic contrast with the lower elevation areas. Between the two are rolling foothills, rugged cliffs, and deep canyons. It is this mosaic of low deserts and high mountains that result in an incredible range of plants and animals and awesome scenery.

Views are a major feature throughout the sky island landscape. In the deserts, wide open views are the norm, and mountain ranges provide focal points. On mountaintops, views can be breathtaking; southern Arizona's clear air and sunny skies provide long vistas across many miles of valleys and numerous other sky island mountains.



Giant Saguaro cactus and poppies in the Sonoran desert (left), Plains Grasslands in the San Rafael valley (center), and Ponderosa pine forest in the Galiuro Wilderness.

Vegetation in the sky island landscape is extremely diverse. Low elevation areas are generally desert scrub and grasslands with sparse, short, well-spaced vegetation that is often grey-green to blue-green in color. Foothills and mountainsides are frequently covered in oak woodlands or chaparral with darkly colored, rounded evergreens which sometimes dot grassy slopes and in other places provide a continuous tree canopy broken only by rocky outcrops. Higher elevations are usually covered with tall pine and mixed conifer forests, often with a grassy or shrubby understory, and occasional aspen stands

and meadows. In parts of the Galiuro Mountains, vegetation is a bit different, with large trees in the canyons and sparser vegetation on drier ridges. Sky islands host several types of riparian vegetation along waterways, from high elevation maple trees and dogwood, to cottonwood trees and mesquite bosques along desert washes. In some places people have modified the vegetation, especially by grazing cattle (causing invasion of sagebrush and mesquites in the desert grasslands), as well as logging and fire suppression in the mountains.



Surface rock (Dragoon Mountains are shown in the photo on the left), including outcrops and escarpments, are common throughout the Sky Island landscapes especially in the foothills and rugged mountain areas. Rock formations in Cave Creek Canyon, the Dragoon Mountains, and parts of the Santa Catalina Mountains are well known to southern Arizona residents. In some mountain ranges, badlands, with unusual rock formations (sometimes called hoodoos), are found.

Water in the sky island landscape is generally seasonal. About half of the annual precipitation falls during the winter rainy season and half during the summer monsoon. Monsoon rain and winter snowmelt flows into creeks, rushes down canyon bottoms, and flows into the desert. Drainage patterns include meandering mountaintop streams, sharply carved canyons with occasional pools, and broad, sandy washes in the desert plains. A few man-made lakes draw large numbers of visitors. Water, in all of its forms, attracts a wide variety of wildlife as well. The streams and riparian vegetation in Cave Creek Canyon, Madera Canyon, and Sabino Canyon are popular attractions for visitors to the Coronado NF.

Natural disturbance regimes include wildfire, which historically burned through the ponderosa pine forests every few years and is a component in most vegetation communities in the sky islands. Rainfall, though not always plentiful, is often heavy, and flooding frequently changes the landscape by scouring vegetation and soils near watercourses. In recent decades, the combination of fire suppression, drought, and climate change has resulted in insect and disease outbreaks that kill trees in uncharacteristically high numbers, and several catastrophic wildfires have altered vegetation radically (the Nuttall Fire in the Pinaleño Mountains is shown in this photo).



People have been living in and enjoying Arizona's sky island region for thousands of years. Prehistoric sites are generally located near water sources in canyon areas and sometimes atop mountain peaks. These sites are usually small and they rarely affect scenery. Historic sites from the mining and ranching activities of early settlers can be found in both deserts and mountains (Powers Cabin in the Galiuro Mountains is shown here). Historic cabins and corrals are scattered across the Coronado NF, but they are usually small in scale and result in minimal effect on scenery. Some historic features, such as Kentucky Camp, are scenic cultural attractions in themselves. Quarries and mines, on the other hand,



can detract from the scenic nature of an area. Most modern human landscape alterations lie in the deserts and foothills, and include large cities such as Tucson, many smaller towns, highways, and agriculture. Communities sometimes grow right up to the Forest boundary. On National Forest lands, roads, recreation areas, and summer homes are commonly seen cultural features. Communication sites and astrophysical structures detract from scenic quality. However, the majority of Coronado NF lands are natural-appearing,.

Landscape Character Goals

Landscape character goals are management prescriptions that strive to achieve and perpetuate the desired conditions. Desired conditions for scenic resources can be found in the Forest Plan. Guidelines and management approaches found in the Forest Plan provide guidance for project-level work. Conditions and steps to best achieve and sustain the desired landscape character are further refined during project level design and planning and should be integrated with other resource values and project objectives. See the Project-Level Implementation section in this document for additional information.

Scenic Attractiveness

The landscape character description above is used to determine which areas are unique, and which are more common. The combination of vegetation, topography, rock form, and water results in three categories of scenic attractiveness: Distinctive (A), Typical or Common (B), and Indistinctive (C).



From left to right: Examples of Indistinctive (low elevation desert scrub in the Tumacacoris), Typical or Common (oak woodland on rolling topography in the Huachucas), and Distinctive (conifer forest atop the Chiricahuas).

In the sky island landscape, desert scrub and desert grassland vegetation extend over most acres, while woodland and forest vegetation are more rare. Most of the area is comprised of relatively flat plains, and mountainous areas are the exception. Water is extremely scarce. Rock forms on the Coronado NF are widespread and tend to associate themselves with steep topography, so specific analysis for them was not necessary (because slope was used as criteria). Based on these criteria, the following matrix displays how Scenic Attractiveness was categorized across the Coronado NF:

Coronado National Forest Scenic Attractiveness			
	Slopes		
Vegetation Type (mid scale dominance)	0-11%	11-30%	>30%
Desert and Semi-Desert (with Saguaros)	C	B	A
Desert and Semi-Desert (other)	C	B	B
Grass Mix (Plains Grassland)	A	A	A
Grass Mix (other)	C	B	B
Oak, Juniper, Pinyon Mix, Chaparral	B	A	A
Upper Pine-Oak	B	A	A
Ponderosa Pine	A	A	A
Upper Evergreen Forest	A	A	A
Sparsely Vegetated (low elevation*)	C	B	A (w/Saguaros), B (without)
Sparsely Vegetated (high elevation**)	A	A	A

* Areas of sparsely vegetated desert.

** Usually areas where wildfire has burned. Because these areas are typically on steeper slopes with natural rock outcrops and revegetation is either successful or underway, they generally have good scenic attractiveness.

In addition, all areas within 1/4 mile of waterforms are class A, regardless of vegetation or slope. Waterforms are defined as places that attract people, including:

- lakes, reservoirs, and ponds that include dam structures (not including stock tanks)
- perennial watercourses
- wetlands and marshes
- watercourses that have unique features such as falls, cascades, or pools during their flow season
- springs with pools

Existing Scenic Integrity

Scenic Integrity is a measure of the degree to which a landscape is visually perceived to be “complete.” The highest scenic integrity ratings are given to those landscapes which have little or no deviation from the character valued by constituents for their aesthetic appeal.

Existing Scenic Integrity (ESI) represents the current condition of a landscape, including deviations from the desired or valued landscape character. Although each visitor has a slightly different idea of what is beautiful or ugly, the majority of people come to National Forests to experience natural landscapes. Generally, elements like utility towers, quarries, and litter are not things that visitors wish to see.

ESI mapping is helpful for conservation of areas with high scenic integrity, restoration of areas with low scenic integrity, and identification of areas for enhancements. It also provides a basis for monitoring scenic resources through time.

Human alterations can be positive, negative, or neutral, depending on whether they are a scenic attraction (such as a valued historic site), provide facilities of value to the public (such as roads and recreation areas), or contrast in line, form, color, and texture with the valued landscape character (such as a mining scar). Common alterations across the Coronado NF include roads, trails, recreation facilities (such as campgrounds, picnic areas, and visitor centers), historic sites, recreation residences, dispersed recreation areas, lookout towers, range facilities (fences, corrals, tanks), astrophysical facilities, mines and quarries, administrative sites, utility lines and structures, communication sites, off-highway vehicle use areas, and shooting and dumping areas. Some of these may seem relatively large when viewed in the immediate foreground along roads or trails, but only a few dominate larger viewsheds unless there is a concentration of disturbances.

Natural features are usually positive, but changes such as catastrophic fire, forest diseases outside of their natural scale, and damage from flooding and debris flows can be unsightly. The Coronado NF has had several major wildfires in recent years that were well out of a natural scale and effect, and these impacts were at least partially due to management (fire suppression, logging, grazing, etc.), though drought and climate change likely played a role. However, natural disturbances are not included in existing scenic integrity mapping for two reasons. First, the SMS Handbook specifically states that “Indirect deviations, such as a landscape created by human suppression of the natural role of fire, are not included” (p. 32). Second, it is very difficult to determine precisely what constitutes “too much” impact (which would be the criteria for mapping an area as lower ESI), and these disturbances are ever-changing and usually recover well (albeit sometimes very slowly).

Scenic Integrity levels measure the degree of deviation from landscape character. There are 6 ratings: Very High, High, Moderate, Low, Very Low, and Unacceptably Low. The following pages describe the levels of Scenic Integrity. Note that these photos can be used for both Existing Scenic Integrity (ESI) and Scenic Integrity Objectives (SIOs). Captions explain examples where these are not the same.

Existing Scenic Integrity maps can be found in the Appendix.

VERY HIGH

Landscapes where the valued character is intact, with only minute deviations such as ecological changes, hiking trails, and occasional range fences. Includes Wilderness and Recommended Wilderness. Existing condition for some unroaded areas is also Very High.



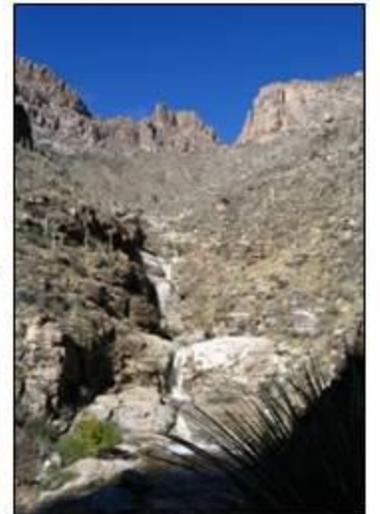
Galiuro Wilderness



Chiricahua Wilderness



The ESI in the Dragoon Mountains is Very High, and exceeds the SIO of High



Seven Falls, Santa Catalinas, Pusch Ridge Wilderness



Far Left: Pajarita Wilderness



Left: Mt. Graham Wilderness Study Area is a recommended wilderness in the Pinaleno Mountains

HIGH

The valued landscape character appears intact, though roads provide access to the forest and places from which to view scenery. Activities borrow attributes found in the landscape. Much of the forest has a scenic integrity of High, and most people visit the forest to enjoy these settings.



The road provides access into scenic Sabino Canyon for pedestrians and a shuttle.



Historic buildings at Kentucky Camp are part of this special place, and rustic materials blend well into the landscape.

Range facilities such as windmills are usually valued landscape elements. Facilities such as tanks and fences are generally small, widely spaced, and/or don't dominate the setting, and therefore are acceptable in SIO High.



An unpaved road into West Cochise Stronghold has colors that minimize contrast with the setting.



The dark-colored, curving road into Madera Canyon lies lightly on the land.



Sky Island Scenic Byway provides opportunities for exploring the rugged Santa Catalinas.



Historic sites like the Alto Ruins are part of the valued landscape on the Coronado NF.

MODERATE

The valued landscape character appears slightly altered and deviations remain subordinate to the natural landscape. Facilities are usually those valued by forest visitors, including developed public recreation areas (such as campgrounds and picnic areas), and privately owned recreation areas such as summer homes, organization camps, lodges, and ski areas. Areas rated as Moderate are relatively small (the area containing facilities and a modest buffer).



The Parker Canyon Lake Marina and Lakeview Campground have Moderate Scenic Integrity. The rest of the lakeshore has High Integrity.



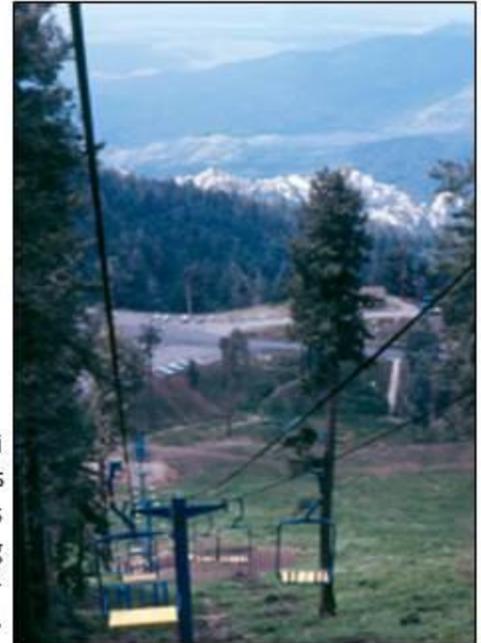
Cave Creek Visitor Center combines a historic building that fits well into the setting.



Roads in Molino Basin Campground create a mosaic pattern similar to natural vegetation.



A Church Camp building uses rock facing that complements the natural setting.



Mt. Lemmon Ski Valley provides valued amenities while maintaining a natural-appearing site.



The Cactus Environmental Education Ramada provides needed shade while using colors from the mountains, and has Moderate Scenic Integrity.

A summer home in the Catalinas uses colors and materials that blend with the surrounding forest.

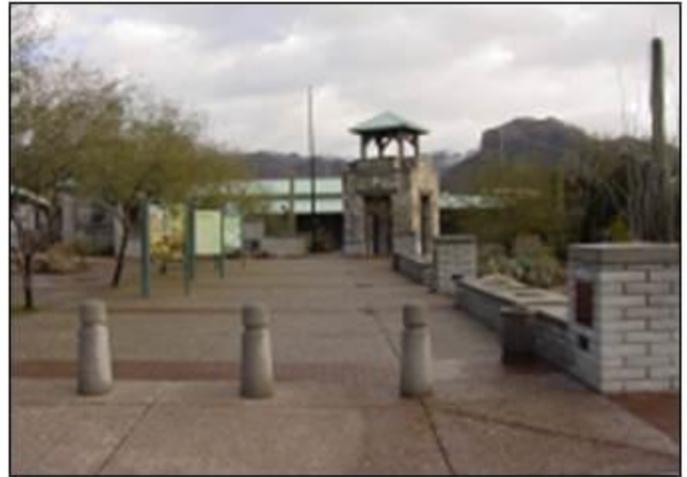


LOW

The valued landscape character appears moderately altered. Deviations begin to dominate. Examples include small astrophysical sites (such as a single building), transmission lines, minor communication sites, and some administrative sites (such as crew quarters). Areas rated as Low are usually small and isolated (the area containing facilities and a modest buffer).



Urban-looking facilities at Melendrez Pass communication site (before the 200 ft. tower was installed) contrast with the natural setting and begin to dominate. The area meets ESI Low.



Sabino Canyon Visitor Center dominates the natural setting, but facilities use colors from the surrounding desert landscape.



The white color of a Steward Observatory building contrasts with the dark vegetation color, but meets ESI Low.



The linear shape of this border surveillance tower contrasts with the rugged and irregular landforms.

The colors of this vehicle barrier and road along the International Border help them blend into the landscape and meet ESI Low. The SIO along the border has been lowered to Very Low to allow for necessary Department of Homeland Security facilities, yet some areas along the border (such as this area) do not yet have major impacts.



The Mt. Lemmon Entry Station contrasts with the natural landscape.

VERY LOW

The valued landscape character appears heavily altered. Human activities may dominate the natural landscape and may borrow few attributes from the landscape. Examples include most larger electronic sites, many astrophysical sites, administrative sites such as warehouses or boneyards, and active mines. Areas rated as Very Low are usually relatively small and isolated (the area containing facilities and a modest buffer).



The colors, linear shapes, and scale of the Mt. Bigelow electronic site contrast sharply with the landscape.



The color of these wide roads and large walls along the International border dominate this setting. The SIO for the border is Very Low, though the current ESI is higher in some areas.



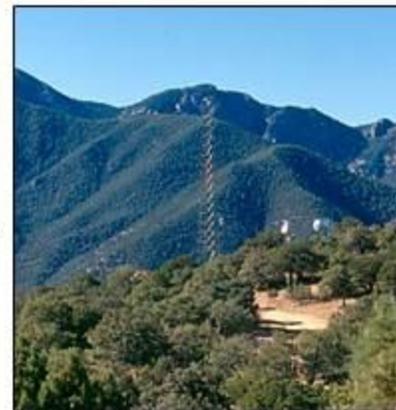
Sabino Canyon warehouse. The building uses desert colors, but the site is heavily altered.



Roads scar the mountaintop at the Mt. Hopkins astrophysical complex.



The boxy shape, light color, and scale of the Mt. Graham International Observatory dominate the setting in this conifer forest. Normally the ESI for a facility like this would be Unacceptably Low, but the visual quality objective for this area was lowered by amending the forest plan.



The linear shape and scale of the Melendrez Pass (after 180 ft. tower installed) are out of character with the surrounding landscape. Note that in locations where it is silhouetted against sky, it's impact is greater.

UNACCEPTABLY LOW

The valued landscape character is extremely altered. Deviations are dominant. Examples are areas where human activities have changed the valued landscape excessively and areas that need rehabilitation. Areas rated as Unacceptably Low are usually relatively small and isolated (the area containing facilities and a small buffer). ***The Unacceptably Low scenic integrity rating is only used for the inventoried condition, never as an objective.***



Urban facilities, exposed soils, and burned trees have destroyed the scenic resources at this electronic site above Mt. Lemmon Ski Valley. This is a popular public use area, and the scenic quality could be improved to meet the SIO of Very Low by painting facilities in dark landscape colors and revegetation of bare ground.



A light-colored quarry in the Dragoon Mountains scars an otherwise natural canyon area. This area could be reclaimed to meet the SIO of High.



Trash and debris near the international border mar the scenery. Note that areas with trash have not been mapped, as the locations change through time. Cleanup would improve scenic quality.



The natural landscape at the Mt. Lemmon complex (which includes a radar base, electronic site, dormitories, and observatory) has been heavily modified. This area could meet a higher SIO through demolition of unnecessary structures, painting white vehicle doors to match the darker-colored buildings, and encouraging revegetation.



Coronado NF Existing Scenic Integrity Mapping

ESI was mapped as follows:

1. ESI Very High was mapped by identifying areas without roads because roadless areas on the Coronado NF have only minor or no deviations to valued landscape character. Areas include Wilderness and recommended wildernesses, as well as other areas on the forest that are farther than ½ mile away from system roads and are over 2500 acres in size. For forest-wide ESI mapping, relatively wide road corridors were used to capture common impacts near system roads such as dispersed use areas and non-system roads (some of which will become NFS roads through travel management) and border impacts. However, on the Coronado NF, many areas closer to roads (e.g., 300 ft) meet criteria for ESI Very High, especially areas with steep topography and/or dense vegetation. These areas should be considered at project level.
2. ESI Moderate, Low, Very Low, and Unacceptably Low areas were identified using the SIO mapping (see How Scenic Integrity Objectives Were Mapped section) and by identifying places where ESI is different from SIOs.
3. The remaining forest was assigned ESI High. There are some facilities in ESI High. These include highly valued historic sites and widely scattered minor facilities such as range fences that are subordinate to the natural landscape. There are also impacts (such as homeland security structures and small un-reclaimed mining areas) but because there are too many of these to map individually, they're widely distributed, and changing through time, and they are located within landscapes that are mostly natural, they are not included in the forest-wide ESI mapping. These can be considered during project level planning. Additionally, land uses on private lands adjacent to and within the Coronado NF (such as metropolitan Tucson and inholdings) did not affect the ESI mapping on Coronado NF lands.
4. Where the scenery objective (SIO) is higher than the existing condition (ESI), there are opportunities for rehabilitation. Areas on the Coronado that could be rehabilitated are listed below. As funds are available and/or projects are planned, scenic quality improvements should be considered:
 - Calcite quarry site in the north end of the Dragoon Ecosystem Management Area (EMA)
 - Emerys quarry in the Santa Rita EMA.
 - Area in the southeastern corner of the Tumacacori EMA (where there are widespread border-related impacts)
 - Noon Creek Administrative Site (Pinaleño EMA)
 - Lunt Ranch Headquarters (Galiuros EMA)
 - Mt. Lemmon Radar Base/Communications Site (Santa Catalina EMA)
 - Radio Ridge Communications Site (Santa Catalina EMA)
 - Pima County Borrow Pit across from Hirabayashi Campground.
 - 5 Residences near Oracle (Santa Catalina EMA)
 - Mt. Lemmon fee booth near Molino Basin (Santa Catalina EMA)

Endangered Scenic Integrity

Although Existing Scenic Integrity on the Coronado NF shows that most areas are in good condition, there are landscapes at risk. Parts of the forest have current land uses that are increasingly impacting scenic resources, some to the point that if they continue, could lead to permanently lowered ESI. Problems are generally related to illegal immigration and smuggling activities, off-highway vehicle use, mining activities, and forest health problems (such as major insect/disease outbreaks and/or conditions that may lead to catastrophic fires).

Fifty-eight miles of the International border separates the Coronado NF and Mexico. Illegal immigration, drug smuggling, and law enforcement activities affect scenic quality and alter forest landscapes.

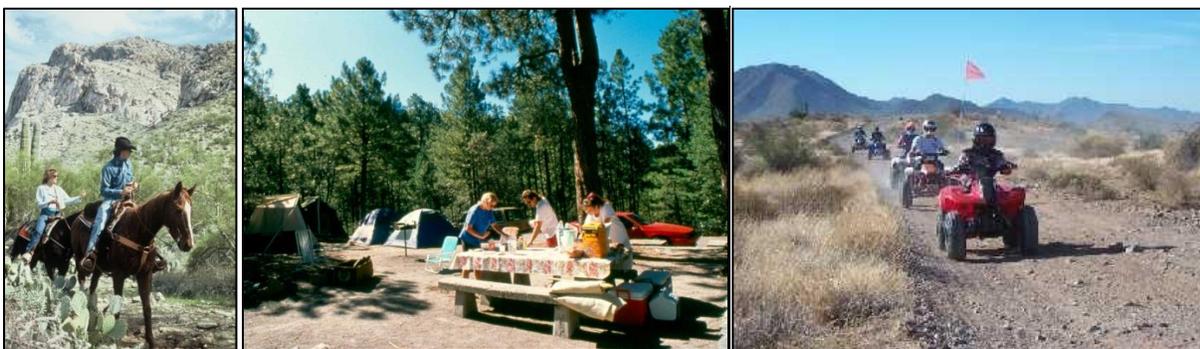
Undocumented Aliens (UDAs) enter the U.S. carrying a wide variety of items (clothing and personal items, blankets and tarps, packs, food, water, drugs, etc.), much of which is left on the forest as trash and debris as they pass through. A small amount of this debris could be considered temporary, since some is biodegradable (though slowly in this arid climate), limited patches will be cleaned up (such as near wilderness trails), and wildfire could burn some of it. However, the problem is so widespread and so unlikely to get better in the foreseeable future that it must be evaluated in ESI mapping. Additionally, the sheer numbers of these UDAs results in a vast network of wildcat roads and trails, and widespread sanitation issues. However, because most of these UDAs avoid being seen, the impacts are often not easily seen along major roadways and visitors traveling through the area would experience only a beautiful, natural landscape (however, if they get out of the car and walk a few steps, they are likely to notice the problems). This created a problem for ESI mapping: in one way the landscape ESI is still high (the overall initial impression driving through an area), but in another way is heavily impacted (the pedestrian walking into a landscape). Additional impacts from Department of Homeland Security (Border Patrol) infrastructure and operations include new roads, fences, walls, and communication and surveillance towers. Effects from both legal and illegal activities now extend many miles into the Coronado NF, not just along the border.

Lands with growing impacts are considered to have “Endangered Scenic Quality”. These lands have not been mapped, but are primarily located on lands south of Interstate 10. Lands with Endangered Scenic Quality should be identified and addressed at project level, described in cumulative effects analysis, and monitored through time.

Concern Levels and Landscape Visibility

Concern Levels are a measure of the degree of public importance placed on landscapes when viewed from travelways (roads and trails) and use areas. Concern Levels reflect a combination of the number of visitors and the interest of visitors in scenery.

On the Coronado NF, Concern Level 1 areas includes recreation areas, roads with very high use (such as interstate highways), popular roadways through the forest (including three scenic byways), and places with lower use where nearly all visitors are very concerned about scenery (such as wilderness trails). Concern Level 2 areas on the Coronado NF includes many backcountry roads and trails which receive moderate to low levels of use and where most visitors have some concern for scenery. Concern Level 3 travelways and areas are those which receive very little use and/or use is primarily by visitors not concerned with scenery (for example, roads used primarily by permittees to maintain livestock and facilities).



Equestrians on a trail in Pusch Ridge Wilderness, campers at Rose Canyon Lake, and backcountry touring along roads in the Santa Rita Mountains.

After Concern Levels are identified, the visibility of lands is mapped. Foreground is defined as up to 1/2 mile from the viewer, Middleground is 1/2 mile to 4 miles, and Background is over 4 miles from the

viewer. To generate visibility maps, the Coronado NF GIS specialist converted road and trail GIS data from lines to points every 400 meters (approx. ¼ mile), and overlaid the points onto digital elevation models (DEMs) to complete GIS computer-visibility mapping. Background was not mapped because running computer visibility for views from off-forest and from other mountain ranges would have exceeded computer processing capacity. Areas on the forest that were not visible in foreground or middleground were coded Background 1.

Concern Level maps can be found in the Appendix.

Scenic Classes

Scenic Class maps indicate the relative importance of scenic resources on the Coronado NF. They are used at a broad scale during forest planning, and refined at project level planning.

Scenic Classes are the result of combining two elements:

1. The scenic attractiveness of lands (the intrinsic beauty and distinctiveness of lands within a region), and
2. Landscape visibility (who is viewing the landscape and from what distance).

GIS was used to combine the two, per the table below (USFS 1995).

Scenic Classes

Scenic Attractiveness	Concern Levels and Distance Zones								
	Fg1	Mg1	Bg1	Fg2	Mg2	Bg2	Fg3	Mg3	Bg3
A	1	1	1	2	2	2	2	3	3
B	1	2	2	2	3	4	3	5	5
C	1	2	3	2	4	5	5	6	7

(Fg=Foreground, Mg=Middleground, and Bg=Background)

The Scenery Management System has 7 Scenic Classes, which measure the relative importance of scenery. The Coronado NF is largely comprised of the mountains, which are most unique landscapes in southeastern Arizona, and the lands of the Coronado NF are extremely visible from many different vantage points, both within and off the forest. Due to this, the Coronado NF lands do not include any Scenic Class 7 lands, which generally have low public value.

Definitions of Scenic Classes:

Scenic Class 1: Scenery has extremely high public value

Scenic Class 2: Scenery has very high public value

Scenic Class 3: Scenery has high public value

Scenic Class 4: Scenery has moderately high public value

Scenic Class 5: Scenery has moderate public value

Scenic Class 6: Scenery has moderately low public value

Scenic Class maps can be found in the Appendix.

Scenery Objectives and Guidance

Scenic Integrity Objectives

Scenic Integrity Objectives (SIOs) provide guidance for managing scenic resources across Coronado NF lands. SIOs indicate the maximum acceptable degree of alteration to landscapes. There are five SIOs ranging from “Very High” (where landscapes are managed for ecological changes only) to “Very Low” (where deviations may dominate the natural character). In most areas, SIOs are established to protect existing scenery. In some areas, there are established and accepted uses that dominate and/or negatively affect scenery (such as communication sites, astrophysical facilities, and administrative areas), and in these areas, SIOs are lowered appropriately for the use. SIOs were established during forest planning and are used for forest plan monitoring and project implementation.

Scenic Integrity Objectives		
Very High	The valued landscape character is intact, with only minute, if any, deviations. The existing landscape character and sense of place is expressed at the highest possible level. Ecological changes only.	Examples: Wilderness and recommended wilderness
High	The valued landscape character appears intact. Deviations may be present, but must repeat form, line, color, texture, and pattern common to the landscape.	Most of the forest, including roaded areas, scenic byways, and many areas without roads. May include range facilities and evident vegetation management.
Moderate	The valued landscape character appears slightly altered. Noticeable deviations must remain visually subordinate to the landscape character being viewed.	Examples: Public recreation sites (such as campgrounds), recreation residence areas, and organization camps.
Low	The valued landscape character appears moderately altered. Deviations begin to dominate the valued landscape character being viewed, but they often borrow attributes from the surrounding landscape.	Examples: Major visitor centers and many administrative sites.
Very Low	The valued landscape character appears heavily altered. Deviations may strongly dominate the valued landscape character, but should appear as natural occurrences when viewed at background distances.	Examples: Most communication sites, most astrophysical sites, large administrative sites, and the international border.

Scenic Integrity Objective maps can be found in the Appendix.

Notes on Scenic Integrity

There are two types of Scenic Integrity in the SMS. Existing Scenic Integrity (ESI) is the current, inventoried condition. Scenic Integrity Objectives (SIO) are the management objectives. Ideally, the two would be the same (i.e., the inventoried condition would meet the management objective for the area). However, in a number of locations on the Coronado NF, this is not currently true, and in some locations it is not feasible. Sometimes the existing condition (ESI) is lower than the desired objective (SIO). This can present an opportunity to improve the scenic condition. For example, abandoned mines with lower ESI could be reclaimed and revegetated. In some area on the Coronado NF, the ESI is higher than the SIO. This is true for Wilderness Study Areas that are not recommended for Wilderness in the Forest Plan, some portions of potentially eligible Wild & Scenic Rivers, and some roadless areas outside of Wilderness. This is also the case in some areas along the International border with Mexico where the

Department of Homeland Security is building roads, fences, and surveillance towers and the SIO has been lowered to accommodate these needs.

Although ESI for the entire Coronado NF has been mapped and SIOs established, these maps may not show very small areas with lower integrity (especially Moderate and below). These should be identified during project level planning.

Note that a high Scenic Integrity Level doesn't always mean that conditions are good. A landscape may appear to be intact, yet contain non-native species, have an excessively high fuels buildup, or be slowly losing diversity. A high Scenic Integrity Level also doesn't mean that no management is needed; actions may be required to maintain the landscape and sometimes short-term impacts to the scenery can provide long term benefits. For example, managed fire can blacken the landscape short-term, yet provide long-term healthier forests that are more resilient to fire, and can benefit scenic resources by providing more park-like conditions (with large trees and a grassy understory) and aspen.

How Scenic Integrity Objectives Were Mapped

SIOs were mapped as follows:

1. Wilderness and recommended wilderness were mapped as Very High using GIS boundaries.
2. Areas of Moderate, Low, or Very Low SIO were mapped by viewing aerial photos and drawing polygons around areas where there are existing disturbances or facilities that impact scenery. These areas typically have numerous facilities (either Federal or permitted private). Places where the natural landscape is still the focus, but have valued facilities such as public recreation areas were mapped as SIO Moderate. Places where the valued landscape has been altered and facilities begin to dominate (such as administrative sites, large visitor centers, and isolated utility structures and telescope facilities) were mapped as SIO Low. Places where the scenery has already been heavily modified for other land uses (such as major communication sites, astrophysical complexes, and mines) were mapped as SIO Very Low, and places where the scenery will likely need to be heavily impacted in the future (such as the International Border) were also mapped as Very Low. GIS polygons for SIO Moderate, Low, and Very Low were drawn around the footprints of the impacts, plus a modest buffer. Where two or more sites exist in close proximity, the polygons were connected (such as the organization camps along Organization Ridge in the Santa Catalina Mountains). In a few cases where the existing scenic integrity is Moderate, Low, or Very Low, but conditions should be improved to meet a higher SIO, the SIO was set appropriately for the desired condition.
3. The remaining forest was assigned an SIO of High. Note that there are some facilities in SIO High, including highly valued historic sites (such as Kentucky Camp) and widely scattered minor facilities that are subordinate to the natural landscape (such as range fences and electric distribution lines). Higher SIOs for other special areas (including Wilderness Study Areas not recommended as wilderness, RNAs, ZBAs, IRAs, eligible Wild & Scenic Rivers, and the Arizona National Scenic Trail corridor) were not established. Most of these areas are in SIO High, and other resource guidance for most of these areas would help protect scenery.

Project-level Implementation

The Scenery Management System provides guidance for working toward desired conditions, a system for analyzing project effects, and a basis for recommending mitigation.

If a proposed project cannot meet SIOs, there are four options:

1. Deny the project as proposed.

2. Modify and/or mitigate the project to meet SIOs.
3. Amend the Forest Plan with a site-specific amendment to change the SIO and update the SIO map.
4. Include a justification through the NEPA process explaining how the project meets the intent of the SIO and moves toward the desired condition (SIO). An example would be a project that causes short-term impacts to scenery in order to achieve long-term benefits to scenery.

As this inventory is used at a project level by landscape architects, the following steps are recommended (not necessarily in sequential order). This should be used as a tickler list, not as a “cookie cutter” process. Direction in the FSM 2380 and the SMS Handbook also applies.

1. Consult the Forest Plan and review desired conditions, guidelines, management approaches, and other sources of information.
2. Consult the Coronado NF’s SMS maps, including the inventory layers and the Scenic Integrity Objectives. Forest-wide SMS GIS feature classes for the Coronado NF include Travelway (Concern Levels), Visibility, Attractiveness (Scenic Attractiveness), Scenic Class, Existing Integrity, and Integrity Objectives (SIOs). Supplemental feature classes include: Slope, Vegetation, and Water Bodies. Note that the forest-wide SMS mapping was based on data available at the time (2012); precise locations must be reviewed at project level, and boundaries adjusted as needed.
3. Review public scoping comments, especially those related to scenery and recreation settings.
4. Review the Concern Level 1 and 2 travelways around the project area and identify anything that is missing or no longer appropriate. New roads or trails may have been constructed or obliterated. Note that the CL mapping for SMS was completed using the road GIS road data that was available prior to the Travel Analysis Process (TAP) and Travel Management, so the alignment of roadways on CL maps may not match current road data (or actual road locations). Consider the fact that the Coronado NF did not identify concern levels for roads within public recreation sites (such as campgrounds), nor were concern level points (such as scenic overlooks) or remote sensitive public use areas (such as creeks used by hikers, ski runs, etc.) mapped, though these may be important in project level design, planning, and analysis. Be aware that the trail GIS data used for SMS mapping was what was available and all trail locations should be reviewed at project level. Confirm viewsheds in the field and with computer viewshed or on-site mapping if necessary (note: forest-level computer visibility mapping converted all roads and trails to points with 400 meter spacing, so it may have missed views in some areas). Public input may provide information about additional areas where there is high concern for scenery.
5. Consider scenic designations (Scenic Byways, Scenic Trails, etc.) and associated plans or guidance for managing scenery (such as Corridor Management Plans).
6. Review the landscape character descriptions and refine as necessary. Describe the line, form, color, texture, and patterns of natural and cultural elements of the project area.
7. Consider opportunities to rehabilitation or enhancement of scenic resources.
8. Verify the Scenic Attractiveness for the specific area. A small riparian area, for example, may not be picked up in forest-level mapping. Use new vegetation inventories as they become available.
9. Define existing and desired conditions for the area.
10. Review the forest-wide Existing Scenic Integrity (ESI) map, analyze scenic integrity at project-level, and develop recommendations to maintain scenic integrity. Where feasible, improve conditions where scenic integrity is poor. Forest-level ESI mapping may not have picked up minor deviations (such as small mines and quarries), or impacts from facilities that are changing frequently (such as Department of Homeland Security surveillance towers). Note that impacts from wildfire are not considered in ESI mapping because fire is a natural process and part of the landscape character. However, management actions that reduce impacts (such as seeding or planting trees) is encouraged.
11. Examine how the proposed project will contrast with the line, form, color, texture, and patterns of the valued natural or cultural landscape characteristics and analyze effects from proposed project and alternatives. Changes to the landscape that contrast with the line, form, color, texture, and patterns of the valued landscape character usually have negative effects. Changes that blend with the line, form,

color, texture, and patterns usually have neutral or positive effects. Determine whether there are ways to alter project design to minimize negative effects or mitigation that would reduce impacts. Determine whether the project will meet or exceed SIOs and Forest Plan direction. Provide input to help the decisionmaker determine whether scenic impacts are significant (examples may include projects that will not meet SIOs, projects that will dominate the valued landscape character, and projects that will result in an unacceptably low level of scenic integrity). For large projects, consider visual simulations to disclose effects.

12. When possible and appropriate, map scenic stability (US Forest Service 2007a) to identify the ecological risk and/or likelihood that the scenic character can be perpetuated through time. For forest health projects, it is appropriate to allow for treatments that will negatively affect scenery in the short term (which may be several years) in order to protect scenic resources over the long-term.

13. Consider mapping Visual Absorption Capability (VAC) if appropriate. A VAC map shows the relative ability of landscapes to absorb change (through management activities or new development) without diminishing scenic quality. If the location of a proposed facility or management activity is flexible, mapping VAC for a larger area may be desirable to identify locations that would reduce or minimize impacts to scenery.

14. Consider whether vegetation will provide screening for project impacts, and determine the effects if the vegetation changes (grows, burns, dies, etc.).

15. Review the Recreation Opportunity Spectrum (ROS) maps. Determine whether any Semi-Primitive Non-Motorized, Semi-Primitive Motorized, or Primitive (SPNM, SPM, or P) areas should be considered Scenic Class 1 or 2, even if the SMS inventory may not have identified them.

16. Establish a transition strategy when existing condition is different than desired condition, including a reasonable timetable for achieving goals.

17. Analyze cumulative effects. Direct and indirect impacts are often relatively modest, but numerous small impacts can cumulatively add up to big effects and scenery in southeastern Arizona is being impacted by numerous activities. Consider trends such as population growth and development outside of the forest boundary, growing impacts from activities along the International border, as well as other past, present, and future impacts to scenic quality across national forest lands and southeastern Arizona including utility lines and structures (including previously overridden visual objectives such as the Melendrez Pass tower), astrophysical facilities (including forest plan amendments to override visual objectives for the Smithsonian Base Camp and MGIO), OHV impacts, mining (including the Rosemont Mine, which would include a forest plan amendment to lower scenery objectives), and forest and ecosystem health (such as insect/disease/fire outside of normal scale, intensity and frequency). Note that some past, present, and foreseeable future projects may improve scenic quality (such as travel management and firescape).

18. Provide appropriate input on above items for NEPA documentation. Write a specialist report if needed for project record.

19. Assist with project implementation as needed. Larger projects may require assistance with field design, monitoring, or adaptive management.

See also proposed SMS Handbook appendices J “Integrated Ecological Concepts” and K “Project Level Analysis”.

Resource-Specific Guidance

For some resources, the Forest Plan direction for managing scenery is adequate. For the resources below, additional guidance is provided here.

For all resources, projects do not need to meet SIOs during construction activities. When construction is complete, the area should meet SIOs.

Range Management and Facilities

Range facilities may exist in all SIOs across the Coronado NF, and may include structures such as fences, tanks, corrals, pipelines, troughs, spring developments, salt houses, and windmills. Many range facilities, such as windmills and wood corrals, are positive visual elements on National Forest lands. Other range facilities, such as cattle guards and buried pipelines, are generally unnoticed by forest visitors. Maintenance and replacement of existing range facilities is acceptable, and when needed, upgrades such as solar pumping plants may be added to wells even when solar arrays do not blend into the landscape. When rustic materials are replaced with more durable materials (such as replacement of a wood corral with a metal corral), consideration of certain mitigation measures which reduce their impact is encouraged (such as painting the metal a dark greyish brown to look similar to wood). New and planned range facilities that have been approved in allotment management plans should ideally be sited and designed to minimize their impacts to scenic resources. Whenever practical, locate range facilities so they are less visible from popular public roads, trails, or recreation sites and select colors that are neutral and found in the landscape at the site. Some examples may be painting a storage tank a neutral brown in an area dominated by dark vegetation and rocks or selecting a tan water trough for an area with tall, yellowish grasses.

It is also acceptable to clear vegetation around range structures as needed, such as to provide protection from wildfire and prescribed fires.

Vegetation and Fire Management

The Coronado NF is working to improve forest health, restore ecosystem function, and decrease wildfire risks, all of which will help protect scenic quality in the long term. Vegetation and fuels management alter the landscape and affect scenic resources because they result in burned vegetation, scorched tree trunks, disturbed ground, slash, and stumps. Vegetation management objectives are found in the Forest Plan. SIOs are set for the long term, and it is acceptable for treatments to negatively affect scenic quality in the short term, which may be years. Scenery guidelines in the Forest Plan exempt short-term impacts in order to complete necessary treatments. For large-scale vegetation management projects, completing all of the recommended treatments may take a decade or longer, and impacts from individual treatments may last for several years. Examples are the Pinaleno Ecosystem Restoration Project (PERP), which will treat vegetation on the upper portions of the Pinaleno Mountains over a decade or more, and several Firescape projects across the Coronado NF, which may also take a decade or more to implement. Typically blackened ground recovers within 1-3 years, but blackened trunks may remain for longer. Mitigation measures to reduce impacts in sensitive areas (such as public roads and campgrounds) is encouraged, and should be defined during project level planning by the Forest landscape architect. The focus should always be meeting long-term SIOs.

Desired conditions and guidelines in the Forest Plan provide additional guidance, and design criteria in NEPA documents for recent vegetation management projects (e.g., PERP, Firescape) provide good mitigation ideas useful for other projects.

Mapping of scenic stability is recommended during project level planning.

Adaptive management during large-scale forest health projects is encouraged. The Coronado NF is just beginning to implement these projects across the forest and will likely learn some things during the first few years. Project managers are encouraged to involve the Forest landscape architect as projects are planned, implemented, and reviewed in order to improve design criteria and mitigation.

Wilderness

Existing facilities within congressionally designated Wilderness boundaries are acceptable (including range, special uses, etc.), even if they do not meet scenic objectives, and new facilities are permissible if they meet wilderness direction, SIOs, and wilderness character. For existing facilities that contrast with the landscape, work toward making them meet SIOs and wilderness character whenever opportunities arise.

For example, Powers Garden Administrative Site is a developed site within the Galiuro Wilderness and constitutes a collection of facilities that include modern elements that are out of character with a typical wilderness setting. However it is part of this wilderness's valued character, and the SIO for the entire wilderness, including the Powers Garden area, is Very High. The existing facilities are acceptable and can be maintained and improved as needed. Whenever possible, keep building materials native and rustic, use colors that are muted and blend with the landscape, and remove unnecessary debris/equipment/stored materials at the site.

It is acceptable to clear vegetation around valued structures such as range facilities and historic sites in order to protect these features from wildfire and prescribed fire.

When possible, avoid placing new facilities in wilderness in order to protect the natural setting. When existing facilities in wilderness are no longer needed, they should be removed and the sites naturalized. Wilderness management should be focused on natural processes and scenery.

International Border

Department of Homeland Security (DHS/Border Patrol) facilities include roads, fences, vehicle barriers, walls, and surveillance towers. These facilities are typically urban or industrial-looking, which contrasts with the natural setting. Although DHS has a NEPA waiver to construct the facilities they deem necessary, whenever possible, mitigation to help these facilities blend into the landscape better is encouraged.

The southeast corner of the Tumacacori EMA has numerous border-related impacts, including roads, towers, and other disturbances. The existing scenic integrity of this area currently meets Low, and the SIO is Moderate. In order to work toward meeting the SIO, impacts should be reduced whenever opportunities arise.

Cleanup of trash and debris, and naturalization of wildcat roads and trails, is encouraged in all border-impacted areas.

Residences and Ranch Headquarters

The Coronado NF is working toward elimination or placement under permit of 5 homes on the forest near Oracle and ranch headquarters on NFS lands that are under special use permit. If non-permitted facilities are removed and the sites reclaimed, the areas will meet SIOs. However, the Coronado would need to follow the USFS special uses process to move these uses off-forest, which may take years.

Mineral Exploration and Mining

There are two mine sites on the Coronado NF that will not blend into the landscape or be reclaimed during the Forest Plan period: Alpha Calcit in the Dragoons and the Imerys marble quarry in the Santa Ritas. These mine sites have been assigned a SIO of Very Low. Numerous other minerals projects across the forest are in various stages of development and reclamation and SIOs for these areas have not been lowered. Reclamation activities are encouraged in order to ultimately achieve SIOs. This may take years and is dependent on funding. For proposed mines that are approved by the Coronado NF, a forest plan amendment may be needed to change the SIO for the mine area. This should be part of the NEPA analysis and decision.

Minerals exploration and associated development is acceptable in all SIOs as long as the long-term SIO is met.

Mitigation needed to meet long-term SIOs may include limiting vegetation removal and damage, minimizing new roads and parking areas, and naturalizing sites as soon as activities are complete. Naturalization should generally include grading and backfilling pits to restore natural contours, restoring natural drainage patterns, tilling compacted areas, placing topsoil, and seeding with native plants found in adjacent areas. If needed to discourage vehicular use in areas to be naturalized, placing woody debris and/or boulders is recommended. Concurrent reclamation is encouraged.

Road Construction and Maintenance

Maintenance and reconstruction of FS and non-FS (county, ADOT, private) roads may have fairly large and permanent, though generally infrequent, impacts to scenery. It is acceptable to not meet SIOs during and up to a year after an active maintenance and reconstruction activity.

Road maintenance sometimes requires borrow material. Whenever possible, borrow pits should be located where they are not visible from public roads and trails and vegetation should be maintained to screen the borrow pit from roads and trails. When a new borrow pit is opened to replace an old one, the old ones should be considered for closure, cleaned up, and naturalized if they are no longer needed.

For road reconstruction projects, mitigation measures to meet SIOs may be needed. Examples include keeping fill slopes 3:1 or flatter (for successful revegetation) where terrain allows, naturalizing disturbed areas (by ripping, seeding, and/or planting), avoiding light-colored riprap and boulders, avoiding of visible drill holes when blasting cut faces, using integral colorant to new concrete structures to blend with landscape colors, and applying desert varnish (such as Permeon or Natina) to freshly exposed rock faces which contrast with landscape colors. On highways that currently have acid-etched or Cor-ten guardrails, new and replacement guardrail (including end rails) should match the existing type.

The Coronado NF is currently working to complete Travel Management NEPA analysis. As proposed changes are approved, the SIO and ESI maps will need to be updated to be consistent with Travel Management decisions.

Cultural Sites

Historic facilities are sometimes positive visual elements. To determine whether a facility is a positive element, consider whether visitors use the site as a destination, visit the site to view structures, and take photos of the facilities. Historic structures exemplifying vernacular architecture and traditional building materials such as adobe, rock masonry, or weathered lumber can be positive elements, in contrast to many modern buildings of modern materials. Examples of cultural facilities that are positive visual elements are Kentucky Camp, Camp Rucker Historic Site, Alto Ruins, Brown Canyon Ranch, and

historic Forest Service Administrative sites such as Columbine, Cave Creek, Rustler Park, Lemmon Rock Lookout, and Cima Cabin. These sites have the same SIO as the surrounding area.

Management activities at these sites usually meet SIOs. However, when necessary to protect, stabilize, or reconstruct portions of these sites, it is acceptable to not meet SIOs in the short term in order to meet long-term SIOs.

Other Facilities

In SIO High, it is acceptable to have small facilities that are subordinate to the natural setting and/or a valued part of the landscape character as long as they are widely scattered, not visually intrusive, and mitigated. This includes, but is not limited to, roads and small parking areas (including associated signs and ditches), range fences, distribution and phone lines and associated utility boxes, minor recreation facilities (such as trailhead kiosks, trash bins, and picnic tables), buried utility lines, and an assortment of other minor elements (apiaries, small cemeteries, weather stations, lookout towers, helipads, and historic mine facilities). Relatively small, isolated facilities such as these do not have much impact on scenic quality. Most are neutral or minimally negative. Some may even help protect scenery (e.g., a trash bin is better than litter). Facilities should generally have footprints under 100'x100', and many are much smaller. Whenever possible, features should be below vegetation height. Mitigation is recommended and may include things like painting utility boxes and trash bins to blend with landscape colors, minimizing cuts and fills, and locating fences and utility lines where they don't require vegetation clearing.

Overhead utility lines should be mitigated when possible. The two transmission lines on the Coronado NF have lowered SIOs, but smaller lines may occur in most SIOs. Whenever possible, new utility lines should be placed within existing utility corridors. When utility lines are replaced, consider siting them to reduce visibility from visually sensitive areas such as roads and trails, and to avoid other visual impacts (such as new access roads and tree removal). Consider burying utility lines where feasible.

There are a number of utilitarian areas on the forest that provide needed equipment (such as communication towers) and multiple-use facilities (such as astrophysical structures). These areas often have a very urban appearance. Whenever possible, mitigation is encouraged to help these facilities blend as much as possible into the natural landscape. Mitigation may include keeping structures at or below vegetation height, retaining and encouraging vegetation that screens views to the facilities, utilizing paint colors that borrow from the surrounding natural landscape, and clustering facilities into as few locations across the forest as possible.

Metal roofs on buildings and other structures are appropriate in any SIO. From some angles metal roofs will reflect the sun, but weathering often reduces the roof glare after a couple of years. Metal roofs are acceptable if the color blends into the landscape. The selection of matte-finished metal panels is preferred over glossy surfaces to reduce specular glare.

Appendix

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Note regarding GIS maps: The USDA Forest Service used the most current and complete data available at the time of SMS mapping. Forest and wilderness boundaries, system roads, recreation site locations, and other elements on these SMS maps may not match newer data, and locations should be reviewed during project level planning. Additionally, the scale of these maps makes it difficult or impossible to see smaller polygons; refer to GIS corporate data for complete information. The USDA Forest Service reserves the right to correct, update, modify, or replace GIS products without notification.

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Relevant Laws, Regulations, and Policy

The Multiple-Use Sustained-Yield Act of 1960 (16 U.S.C. 528 (note)) - authorizes and directs the Secretary of Agriculture “to develop and administer the renewable surface resources of the National Forests” with “harmonious and coordinated management of the various resources . . . with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output.”

Wilderness Act (1964) - The act dictates that Wilderness is an area of Federal land that will be managed to retain its primeval character and influence. It is protected and managed so as to preserve its natural condition and the imprint of man's work must be substantially unnoticeable.

Wild and Scenic Rivers Act (1968) - The outstandingly remarkable scenic values of rivers eligible or suitable to be included in the system must be carefully managed. Any management activities that could negatively impact the scenic resources should not be conducted.

National Trails System Act (1968) - This act states that trails should be established within scenic areas and along historic travel routes of the Nation, which are often more remotely located.

National Environmental Policy Act of 1969 (NEPA) - NEPA states that it is the “continuing responsibility of the Federal Government to use all practicable means to assure for all Americans, aesthetically and culturally pleasing surroundings.” Therefore, NEPA mandates agencies to develop methodologies for scenery management of “aesthetically and culturally pleasing surroundings” that are capable of being put into practice, even if they are not currently in use. NEPA also requires “a systematic and interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts into planning and decision-making which may have an impact on man’s environment.” To accomplish this, numerous federal laws require all Federal land management agencies to consider scenery and aesthetic resources in land management planning, resource planning, project design, implementation, and monitoring. These Federal laws include the following:

Environmental Quality Act (1970) - This act sets forth a national policy for the environment which provides for the enhancement of environmental quality.

Forest and Rangeland Renewable Resources Planning Act (1974) - This act provides direction to conduct aesthetic analysis and assess the impacts on aesthetics for timber harvesting. It also provides the framework for natural resource conservation.

National Forest Management Act (1976) - This act provides direction that the preservation of aesthetic values is analyzed at all planning levels. Part 219.21 requires that the visual resource shall be inventoried and evaluated as an integrated part of evaluating alternatives in the forest planning process, addressing both the landscape's visual attractiveness and the public's visual expectation.

Public Rangelands Improvement Act (1978) - This act declares that "unsatisfactory conditions on public rangelands reduce the value of such lands for recreational and aesthetic purposes.”

The Intermodal Surface Transportation Efficiency Act of 1991 (23 U.S.C. 101 (note)) - directs the establishment of a national scenic byways program with designation criteria to include consideration of scenic beauty. It further recommends that designated travelways have operation and maintenance standards which include “strategies for . . . protecting and enhancing the landscape and view corridors surrounding such a highway.”

36 CFR part 219, subpart A, National Forest System Land and Resource Management Planning - includes requirements for consideration, treatment, and protection of intangible resources such as scenery and aesthetics.

36 CFR part 251, subpart B, Special Uses- includes requirements for permittees or holders to minimize damage to scenic and aesthetic values.

36 CFR part 223, Sale and Disposal of National Forest System Timber - includes requirements for protection of environmental quality and for minimizing adverse effects on, or providing protection for and enhancing, other National Forest System resources.

36 CFR part 297, Wild and Scenic Rivers - includes requirements for the protection of scenic and natural values from the effects of any water resources project.

36 CFR, part 293, Wilderness -- Primitive Areas - includes requirements for scenic use, preservation and protection of wilderness character, and promotion and perpetuation of specific values including solitude and inspiration.

36 CFR part 228, subpart A, Locatable Minerals - includes requirements for harmonizing mineral operations with scenic values (sec. 228.8), and protecting scenic values when approving access to those operations (sec. 228.12).

36 CFR part 254, Landownership Adjustments - includes requirements for protecting aesthetic values on lands involved in these transactions.

Forest Service Manual 2300 - Recreation, Wilderness, and Related Resource Management; Chapter 2380 - Landscape Management. 2003.

Agriculture Handbook 701 (Vol. 2, Ch. 1 in the National Forest Landscape Management Series), "Landscape Aesthetics: A Handbook for Scenery Management". 1995.

GIS Summary

Vegetation

HuacSykPlains and SritSykPlains

1. Merged SykPlains with Plains Grassland to get SykPlains_MidscalePlains (field “exp” is Plains Grassland)
2. Merge all polygons into one
3. Intersect step 2 shapefile with slopes to get SritSykPlains_MidscalePlainsSlope (slope and plains grassland)

Riparian Veg

1. Buffer rip veg ¼ mile each side
2. Delete out those rip veg that don't intersect with plains grassland

Merge HuacSykPlains_MidscalePlainsSlope with huacripvegbuffered to get huacripvegbuffered_merge

Erase out SritSykPlains_MidscalePlainsSlope from SlopeSritWB

Add above back in

Assign blank Scenic “A”

Merge A, B, C to get only 3 polygons

Delete out attributes not needed from table

Scenic Attractiveness

Revised slope (revslope090711)

- 0-11%
- 11-30%
- >30%

Sykes – Plains Grassland

GAP Vegetation Data – Mogollon Chaparral

Merged Mid-scale Dominance with Plains Grassland & Mogollon Chaparral to get “Revised Vegetation layer

Merged this with revslope090711

New Matrix applied

Layer with revised slope, revised vegetation & “A, B, C” in new column “scenic” called Slopexxx_WB

Buffered waterbodies ½ mile

Erased them out of above & put back in – attributed them as A

Erased out riparian vegetation strings, added back in, attributed them as A

Created 2 shapefiles for each EMA: xxxripvegadded.shp (has all data) and xxx.shp (A, B, C combined)

Visibility

Roads – outside & inside Forest

- CL1
- CL2
- CL3

Clip all roads in each EMA to 4 miles buffer

Separate CL1, CL2, CL3 roads for each EMA

Make 5 mile buffer of each EMA

Mask new DEM with 5 mile buffer

Run viewshed using 5 mile buffer for each EMA for CL1, CL2, CL3 roads

Reclassify into 2 Gridcodes: record values; reset old values 3 and above to 2; leave 1 value as 1
Convert Raster to Vector
Convert lines to points with 400m spacing
Run visibility command

Foreground, Middle ground, Background

Use each EMAs CL1, CL2, CL3 roads & buffer them ½ mile each side (2640 feet) – total of 1 mile. Call it cl1buffer1_2 for each EMAs CL1, CL2, CL3 roads. Put in each EMA folder. Merge all polygons into 1
Use Vis<ema>1,2,3. Take out not visible from this file – will be left with “holes” – is ok
Intersect cl1buffer1_2 with vis<ema>1. Call it <ema><1,2,3>buffvis.shp. will have “holes” – is ok
Do for all EMAs & CL roads

Distance Zones

[Using Dragoon as example]

Buffer CL1 roads ½ mile on each side – “drag1fg.shp” – merge into 1
Intersect drag1fg with dragone polygons – erase out not visible (Gridcode 1) – merge into 1
Buffer CL1 roads 4 miles each side – “drag1mg.shp” - merge into 1
Erase drag1fg out of drag1mg – “dragerasedfrommg.shp”
Intersect dragerasedfrommg.shp with drag1 = drag1mgintersect – erase out not visible (D=Gridcode 1) – merge into 1
Files are called xxxone.shp, xxxtwo.shp, xxxthree.shp

ESI

Rds buffer ½ mile
Each EMA buffer merge into 1
Combine all EMA buffers into 1 file
Clip to Forest Boundary
Union with Forest Boundary
Explode
Calculate acres
Clean up table
Add field sio – text – 15 characters
Sort by acres
Hand pick up to 640 acres – put as H or VH
Merge like attributes
ALP wilderness
Erase out wilderness
Add back in
Those are VH
Classify small polygons for campgrounds, admin sites, etc. as M, L, VL, UL
Delete stuff from table

Note: The USDA Forest Service uses the most current and complete data available. GIS data and product accuracy may vary and scenery mapping utilized the road data available prior to travel management. The USDA Forest Service reserves the right to correct, update, modify, or replace GIS products without notification.

